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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P35138-P0	**FOR FURTHER ACTION**	See Form PCT/IPEA/416
International application No. PCT/JP2004/019287	International filing date *(day/month/year)* 16.12.2004	Priority date *(day/month/year)* 08.01.2004

International Patent Classification (IPC) or national classification and IPC
INV. G06F1/00

Applicant
MATSUHITA ELECTRIC INDUSTRIAL CO., LTD.

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 8 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☒ *sent to the applicant and to the International Bureau)* a total of 9 sheets, as follows:
      ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in celectronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
19.12.2005	04.04.2006

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/JP2004/019287

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
   - ☐ international search (under Rules 12.3 and 23.1(b))
   - ☐ publication of the international application (under Rule 12.4)
   - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

   Description, Pages

   1-35 as originally filed

   Claims, Numbers

   1, 3-5, 8, 9, 11, 12, 15, 16, 19, 22 received on 19.12.2005

   Drawings, Sheets

   1/13-13/13 as originally filed

   ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☒ The amendments have resulted in the cancellation of:
   - ☐ the description, pages
   - ☒ the claims, Nos. 2,6,7,10,13,14,17,18,20,21,23
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

4. ☒ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages
   - ☒ the claims, Nos. 9
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

* *If item 4 applies, some or all of these sheets may be marked "superseded."*

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1,3-5,8,9,11,12,15,16,19,22
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1,3-5,8,9,11,12,15,16,19,22
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1,3-5,8,9,11,12,15,16,19,22
	No:	Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item I

Basis of the report

1. The amendments filed with letter received on 19.12.2005 introduce subject-matter which extends beyond the content of the application as filed, contrary to Article 34(2)(b) PCT. The amendments concerned are the following:

   In claim 9, "a modification detection information generation unit ... depending on a transmission path to the terminal device, and **instruct the relay server to generate the second license**". However, from the description (page 4, line 30 - page 5, line 4) the modification detection information generation unit instructs the relay server to generate the second license **in the case** where a frequency band of the transmission path is narrower than a predetermined frequency band or a communication speed of the transmission path is slower than a predetermined communication speed. Therefore, claim 9 introduce added subject-matter.

   Hence, the amendment concerning the technical feature "and instruct the relay server to generate the second license" will be disregarded in claim 9.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:

   D1: US 2003/048907 A1 (NAKAHARA TOHRU ET AL) 13 March 2003 (2003-03-13)
   D2: US 2002/012432 A1 (ENGLAND PAUL ET AL) 31 January 2002 (2002-01-31)
   D3: EP-A-1 378 811 (MICROSOFT CORPORATION) 7 January 2004 (2004-01-07)
   D4: US-A-5 765 152 (ERICKSON ET AL) 9 June 1998 (1998-06-09)
   D5: WO 03/096136 A (PROTEXIS INC; ALDIS, DAVID; KEJSER, BRIAN; MUECKE, INNES; RIEBE, HENNI) 20 November 2003 (2003-11-20)

2. The application does not meet the requirements of Article 6 PCT, because claims 9,

15 and 19 are not clear.

Claim 9 claims "a license management server **in** a content distribution system comprising the license management server, a relay server, and a terminal device..."; and thus it is not clear whether the protection sought is limited to the license management server or whether the content distribution system as a whole is to be protected. For the rest of the communication, claim 9 will be interpreted as seeking protection for the whole content distribution system.

A corresponding argumentation applies, mutatis mutandis, to claims 15 and 19.

3. The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and shows (the references in parentheses applying to this document):

A content distribution system comprising a license management server ("server 21", paragraph 79), a relay server ("terminal apparatus 22", paragraph 79) and a terminal device ("terminal apparatus 32", paragraph 126)

wherein the license management server includes a first license generation unit operable to generate, in a first format, a first license for controlling content use in the terminal device ("generating license information Dlc1", paragraph 90),

the relay server includes a second license generation unit operable to generate, in a second format, a second license, the second format being different from the first format ("the conversion apparatus Uc1 ... converts the license information Dlc1 ... to the license information Dlc2 which is compatible with the terminal apparatus 32", paragraph 126; "conversion apparatus Uc1 ... may be stored in the terminal apparatus 22", paragraph 159),

the terminal device includes a use unit operable to use the content ("utilizes the resultant encrypted content", paragraph 126).

3.1 The subject-matter of claim 1 differs from the content distribution system of D1 in that:

the license management server includes a modification detection information generation unit operable to generate a digital signature for detecting a modification of the first license and send the generated digital signature to the relay server, depending on a transmission path to the terminal device; a specification information receiving unit operable to receive an input of format specification information that is an instruction, to the terminal device, for converting a format of a second license to the first format; and a specification information sending unit operable to send the received format specification information to the relay server;

the second license generation unit operable to generate the second license by adding to the first license the digital signature for detecting a modification of the first license, and add to the generated second license, the format specification information received by the license management server;

and the terminal device includes a format conversion unit operable to obtain the second license from the relay server and convert the format of the second license into the first format, according to the format specification information added to the second license; a judgement unit operable to judge presence or absence of the modification of the first license whose format is converted by the format conversion unit based on the digital signature; and the use unit operable to use the content according to the first license in the case where the judgment unit judges that no modification is made.

3.2 The subject-matter of claim 1 is therefore new (Article 33(2) PCT).

3.3 The problem to be solved by the present invention may be regarded as how to further secure the use of the content associated to a license in a multi-format license environment.

The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

In document D1 the license format conversion is performed for interoperability

reasons, and once a license is converted from format Dlc1 to format Dlc2, license Dlc2 is completely independent of the format of license Dlc1. However, the present application follows a different approach as the terminal cannot use directly the second license in order to use the associated content but has to convert the second license into the first format (generated by the license management server) by means of the "format specification format" included in the second format and specified by the license management server, and has to validate the conversion into the first format by means of the "digital signature". Therefore the use of the content is further secure as it can just be utilized with the license format issued by the license management server and after having validated a license conversion into this first format.

Furthermore, the combination of any of the documents D1 to D5 does not enable a person skilled in the art to easily conceive a content distribution system, like the present invention, in which (a) a license issuer specifies a processing format of the license in the terminal device, and (b) the terminal device converts the license format into the specified license processing format and then verifies a modification of the converted license.

Therefore, the subject-matter of claim 1 is considered to involve an inventive step in the sense of Article 33(3) PCT.

4. The same reasoning applies, mutatis mutandis, to corresponding independent claim 22 (method), and independent claims 9, 15 and 19 which claim the same content distribution system but using a slightly different wording. Therefore claims 9, 15, 19 and 23 are considered to meet the requirements of the PCT with respect to novelty and inventive step.

5. Claims 3-5 and 8, claims 11 and 12, and claim 16 are dependent on claims 1, 9 and 15 respectively, and as such also meet the requirements of the PCT with respect to novelty and inventive step.

CLAIMS

1. (Amended) A content distribution system comprising a license management server, a relay server and a terminal device,

wherein the license management server includes:

a first license generation unit operable to generate, in a first format, a first license for controlling content use in the terminal device;

a modification detection information generation unit operable to generate a digital signature for detecting a modification of the first license and send the generated digital signature to the relay server, depending on a transmission path to the terminal device;

a specification information receiving unit operable to receive an input of format specification information that is an instruction, to the terminal device, for converting a format of a second license to the first format; and

a specification information sending unit operable to send the received format specification information to the relay server,

the relay server includes

a second license generation unit operable to generate, in a second format, a second license by adding, to the first license, the digital signature for detecting a modification of the first license, the second format being different from the first format, and add, to the generated second license, the format specification information received by the license management server,

the terminal device includes:

a format conversion unit operable to obtain the second license from the relay server and convert the format of the second license into the first format, according to the format specification information added to the second license;

a judgment unit operable to judge presence or absence of the modification of the first license whose format is converted by

the format conversion unit based on the digital signature; and

a use unit operable to use the content according to the first license in the case where the judgment unit judges that no modification is made.

2. (Cancelled)

3. (Amended) The content distribution system according to Claim 1,

wherein, in the case where a frequency band of the transmission path is narrower than a predetermined frequency band or a communication speed of the transmission path is slower than a predetermined communication speed, the modification detection information generation unit sends the digital signature to the relay server and instructs the relay server to generate the second license.

4. The content distribution system according to Claim 3,

wherein the second license generation unit generates the second license whose data size is smaller than a data size of the first license generated in the first format.

5. (Amended) The content distribution system according to Claim 1,

wherein the license management server includes a first sending unit operable to send the first license to the terminal device,

the relay server includes a second sending unit operable to send the second license to the terminal device via the transmission path different from the transmission path in the case of using the license management server, and

the terminal device obtains the second license from the

second sending unit.

6. (Cancelled)

7. (Cancelled)

8. (Amended) The content distribution system according to Claim 1, further comprising a plurality of servers, one of which is the relay server according to Claim 1,

wherein each of the relay servers includes an "n"th license generation unit operable to generate an "n"th ("n" is a natural number that is 2 or greater) license, in an "n"th format, generated by adding, to the first license, the digital signature for detecting the modification of the first license, the "n"th format different from the first format, and

the format conversion unit obtains the "n"th license from one of the relay servers and converts the format of the "n"th license into the first format.

9. (Amended) A license management server in a content distribution system comprising: the license management server; a relay server; and a terminal device,

wherein the license management server distributes a first license for controlling content use in a terminal device,

the relay server generates, in a second format, a second license by adding, to the first license, a digital signature for detecting a modification of the first license, the second format being different from a format used when the first license is

generated, and distributes the second license, and

the terminal device generates the first license by format transformation by obtaining the second license, detects presence or absence of the modification of the generated first license based on the digital signature, and, in the case where no modification is detected, uses the content according to the first license,

the license management server includes:

a first license generation unit operable to generate, in a first format, the first license; and

a modification detection information generation unit operable to generate the digital signature of the first license, send the generated digital signature to the relay server, depending on a transmission path to the terminal device, and instruct the relay server to generate the second license;

a specification information receiving unit operable to receive an input of format specification information that is an instruction, to the terminal device, for converting the format of the second license into the first format;

a specification information sending unit operable to send the received format specification information to the relay server.

10. (Cancelled)

11. (Amended) The license management server according to Claim 9,

wherein, in the case where a frequency band of the transmission path is narrower than a predetermined frequency band or a communication speed of the transmission path is lower than a predetermined communication speed, the modification detection information generation unit sends the digital signature to the relay server and instructs the relay server to generate the second license.

12. The license management server according to Claim 11, wherein the relay server generates the second license whose data size is smaller than a data size of the first license generated in the first format.

13. (Cancelled)

14. (Cancelled)

15. (Amended) A relay server in a content distribution system comprising: a license management server; the relay server; and a terminal device,

wherein the license management server distributes a first license for controlling content use in a terminal device,

the relay server generates, in a second format, a second license generated by adding, to the first license, a digital signature for detecting a modification of the first license, the second format being different from a format used when the first license is generated, and distributes the second license, and

the terminal device generates the first license by format transformation by obtaining the second license, detects presence or absence of the modification of the generated first license based on the digital signature, and, in the case where no modification is detected, uses the content according to the first license,

the relay server includes:

a second license generation unit operable to generate, in the second format different from the first format, the second license by

adding, to the first license generated in the first format, the digital signature of the first license received from the license management server, receive an input of format specification information from the license management server, the format specification information that is an instruction, to the terminal device, for converting the format of the second license to the first format, and add the received format specification information to the generated second license; and

a second sending unit operable to send the generated second license to the terminal device.

16. The relay server according to Claim 15,

wherein the second sending unit sends the second license to the terminal device via a transmission path different from the license management server.

17. (Cancelled)

18. (Cancelled)

19. (Amended) A terminal device in a content distribution system comprising: a license management server; a relay server; and the terminal device,

wherein the license management server distributes a first

license for controlling content use in the terminal device,

the relay server generates a second license generated, in a second format, by adding, to the first license, a digital signature for detecting a modification of the first license, the second format being different from a format used when the first license is generated, and distributes the second license, and

the terminal device uses the content according to the first license by obtaining the second license and generates the first license using format conversion,

the terminal device includes:

a format conversion unit operable to obtain the second license generated in the second format from the relay server, and convert a format of the obtained second license into a first format different from the second format so as to generate the first license according to format specification information that is an instruction to the terminal device for converting the format of the second license to the first format, and that is added to the second license;

a judging unit operable to judge presence or absence of the modification of the generated first license based on the digital signature added to the second license; and

a use unit operable to use the content according to the first license in the case where the judgment unit judges that no modification is made.

20. (Cancelled)

21. (Cancelled)

22. (Amended) A license distribution method for use in a content distribution system including a license management server, a relay server and a terminal device, the method comprising:

generating, in a first format, a first license for controlling content use in the terminal device, the generation being executed by the license management server;

generating a digital signature for detecting a modification of the first license and sending the generated digital signature to the relay server, depending on a transmission path to the terminal device, the generating and sending being executed by the license management server;

receiving an input of format specification information that is an instruction, to the terminal device, for converting a format of a second license to the first format, the receiving being executed by the license management server;

sending the received format specification information to the relay server, the sending being executed by the license management server;

generating a second license in a second format different from the first format by adding, to the first license, a digital signature for detecting a modification of the first license, and adding the format specification information received by the license management server to the generated second license, the generation and adding being executed by the relay server;

converting the format of the second license into the first format by obtaining the second license from the relay server, according to the format specification information added to the second license, the conversion being executed by the terminal device;

judging presence or absence of the modification of the first

license whose format is converted into the first format based on the digital signature, the judgment being executed by the terminal device; and

using the content according to the first license in the case where it is judged that no modification is made, the use being executed by the terminal device.

23. (Cancelled)